

# **Mobile Digital Video Recorder CMDVR-0402**

## **User Manual**

# ***IMPORTANT SAFETY INSTRUCTIONS***

## **FCC Compliance Statement**

**NOTE :** This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

## **Safety Instructions**

### **1. Read Instructions**

All the safety and operating instructions should be read before the product is operated.

### **2. Retain Instruction Manuals**

The safety and operating instructions should be retained for future reference.

### **3. Heed Warnings**

All warnings on the product and in the operating instructions should be adhered to.

### **4. Follow Instructions**

All operating and use instructions should be followed.

### **5. Cleaning**

Unplug the power cord before cleaning.

Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.

### **6. Attachments**

Do not use attachments not recommended by the product manufacturer as they may cause hazards.

### **7. Water and Moisture**

Do not use this product near water.

### **8. Ventilation**

Slots and openings in the cabinet are provided for ventilation and to ensure reliable operation of the product and to protect it from overheating, and these openings must not be blocked or covered.

### **9. Power Sources**

This product should be operated only from the type of power source indicated on the marking label. If you are not sure of the type of power supply, consult your product dealer.

### **10. Safety Check**

Upon completion of any service or repairs to this product ask the service technician to perform safety checks to determine that the product is in proper operating condition.

### **11. Heat**

The product should be situated away from heat sources such as radiators, heat registers, stoves, or other products (including amplifiers) that produce heat the product.

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# **1. INTRODUCTION**

The CMDVR0402 is a compact sized multiplexer digital video recorder developed specifically for mobile transportations such as vehicles, buses, trains, etc. Unlike outdated time-lapse VCRs, the CMDVR0402 provides extremely long recording capabilities with advanced recording and convenient search functions.

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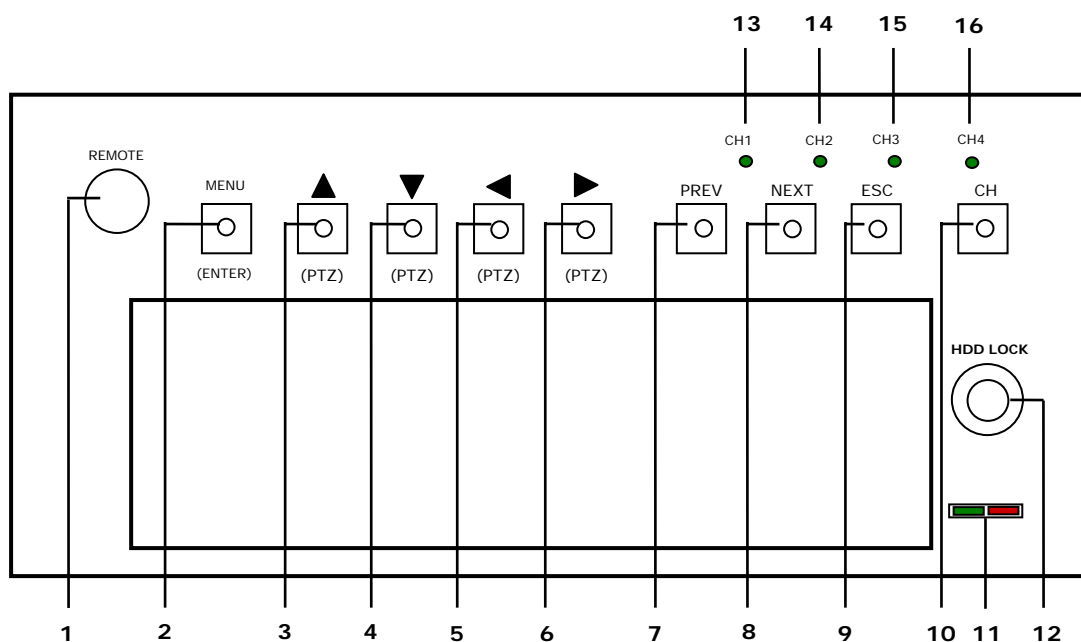
## **Package Contents**

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Check the package and contents for visible damage. If any components are damaged or missing, do not attempt to use the unit, contact the supplier immediately. If the unit must be returned, it must be shipped in the original packing box.

<b>CMDVR0401 Unit</b>	<b>DC Power Cable</b>	<b>Remote Controller</b>
<b>HDD Lock Key</b>	<b>User Manual</b>	<b>Network Client Software</b>

## Front Panel



**1 REMOTE SENSOR**

**2 MENU(ENTER)**

Enter MENU, Select, Apply values

**3 ▲(PTZ)**

Move, increase values, PTZ control(Tilt)

**4 ▼(PTZ)**

Move, decrease values, PTZ Control(Tilt)

**5 ◀(PTZ)**

Move, decrease values, PTZ Control(Pan)

**6 ▶(PTZ)**

Move, increase values, PTZ control(Pan)

**7 PREV**

Move to previous category

**8 NEXT**

Move to next category

**9 ESC**

Return to previous mode

**10 CH**

Change channels during monitoring or playback.

**11 HDD POWER / OPERATION LED**

**12 HDD KEY LOCK**

**13 CH1**

Recording Indicator LED

**14 CH2**

Recording Indicator LED

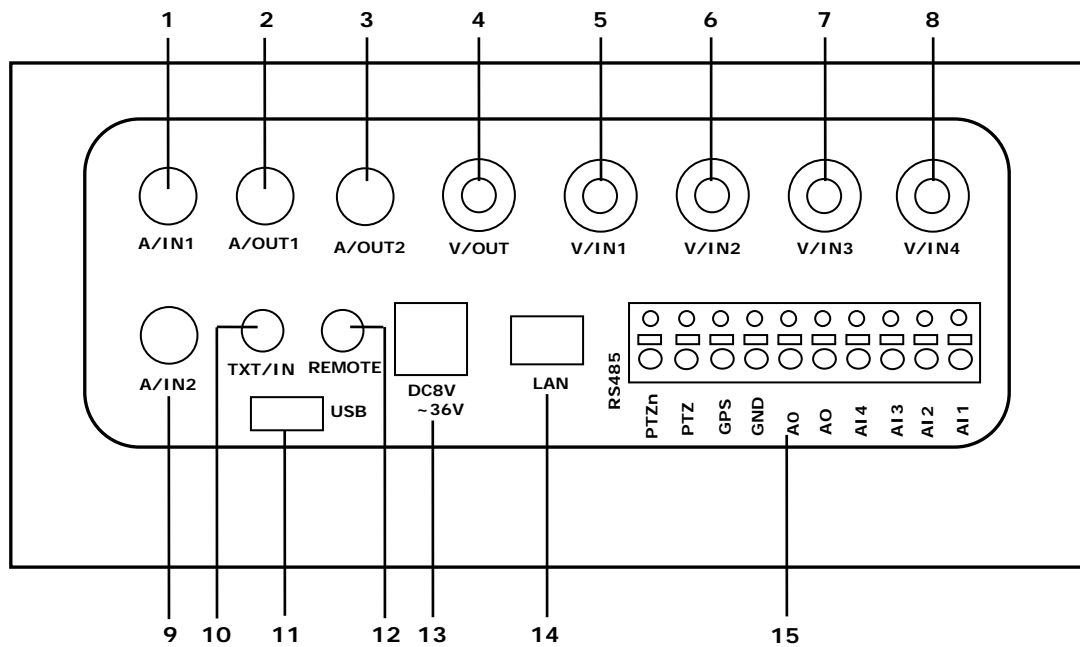
**15 CH3**

Recording Indicator LED

**16 CH4**

Recording Indicator LED

## Rear Panel



1 Audio In 1

2 Audio Out 1

3 Audio Out 2

4 Video Out

5 Video In 1

6 Video In 2

7 Video In 3

8 Video In 4

9 Audio In 2

10 Text In

11 USB Port

12 Remote Eye

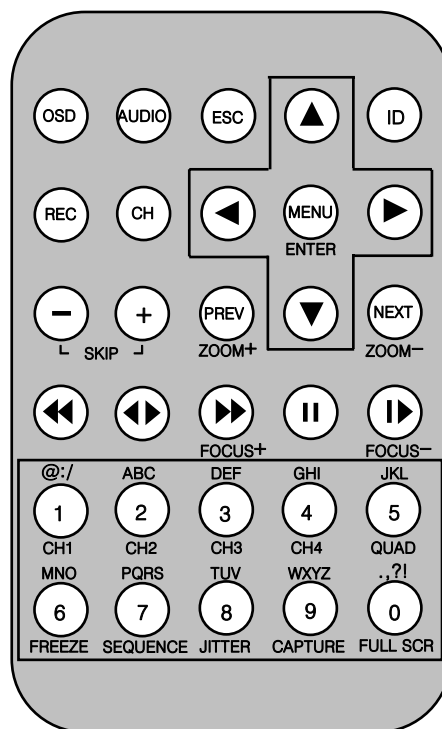
13 Power Cord

14 LAN

15 RS485

## Remote Controller

OSD	OSD On/Off.
AUDIO	Select Audio Channel.
ESC	Return to previous mode.
▲	Move Up, PTZ Control(Tilt), Increase value.
ID	Set ID of remote controller. (While pressing ID button, press 2 digits from the number buttons and release the ID button). Identical ID must be applied for the DVR and Remote controller.
REC	Record On/Off.
CH	Change channels during monitoring or playback.
◀	Move Left, PTZ Control(Pan), Decrease Value.
MENU(ENTER)	Bring up Menu, Select, Apply Changes.
▶	Move Right, PTZ Control(Pan), Increase Value.
-(SKIP)	Jump 5 min. during Playback. Frame Advance during Pause. Change speed during Slow/FF/RW.
+(SKIP)	Jump 5 min. during Playback. Frame Advance during Pause. Change speed during Slow/FF/RW.
PREV(ZOOM+)	Move to previous category. Zoom-In.
▼	Move Down, PTZ Control(Tilt), Decrease Value.
NEXT(ZOOM-)	Move to next category. Zoom-Out.
◀◀	Fast reverse playback.
◀▶	Toggle between Forward/Reverse Play.
▶▶ (FOCUS+)	Fast Forward Playback.
⏸	Pause playback.
▶▶ (FOCUS-)	Playback in slow motion.
1~4(CH1~CH4)	Number/symbol buttons or select channels 1~4.
5(QUAD)	Number/Letter button or change to multi-display.
6(FREEZE)	Number/Letter button or freeze video during monitoring mode.
7(SEQUENCE)	Number/Letter button or select sequence display during monitoring mode.
8(JITTER)	Number/Letter button or Remove video jitter during pause..
9(CAPTURE)	Number/Letter button or capture video during playback.
0(FULL SCR)	Number/symbol buttons or change to full screen display.

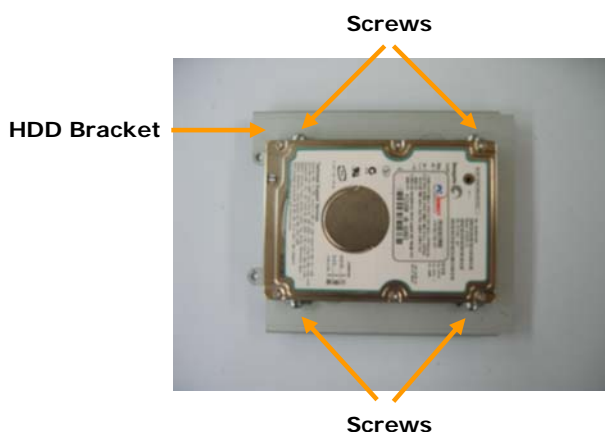


## 2. INSTALLATION

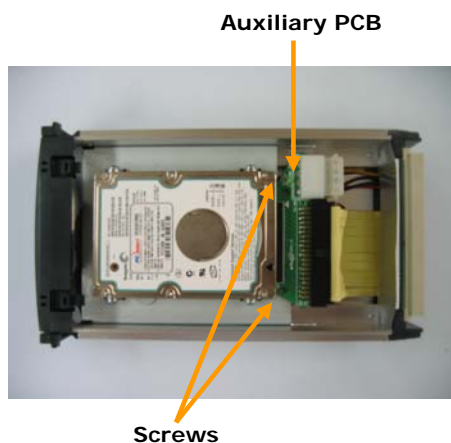
### Hard Drive



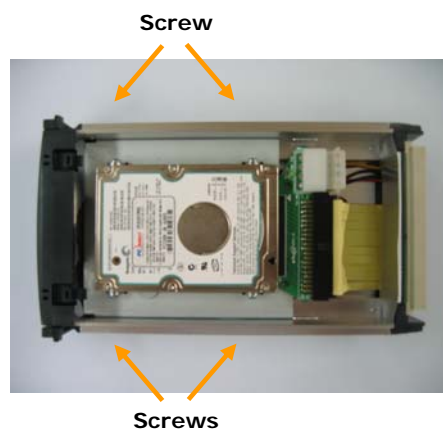
1. Detach the Removable HDD Tray from the DVR.



2. Detach the HDD Bracket from the Tray and attach the 2.5 inch HDD onto the Bracket with the supplied screws.



3. Insert the HDD Bracket into the Tray and connect the 2.5 inch HDD to the Auxiliary PCB. Then fix the Auxiliary onto the Bracket with the supplied screws.



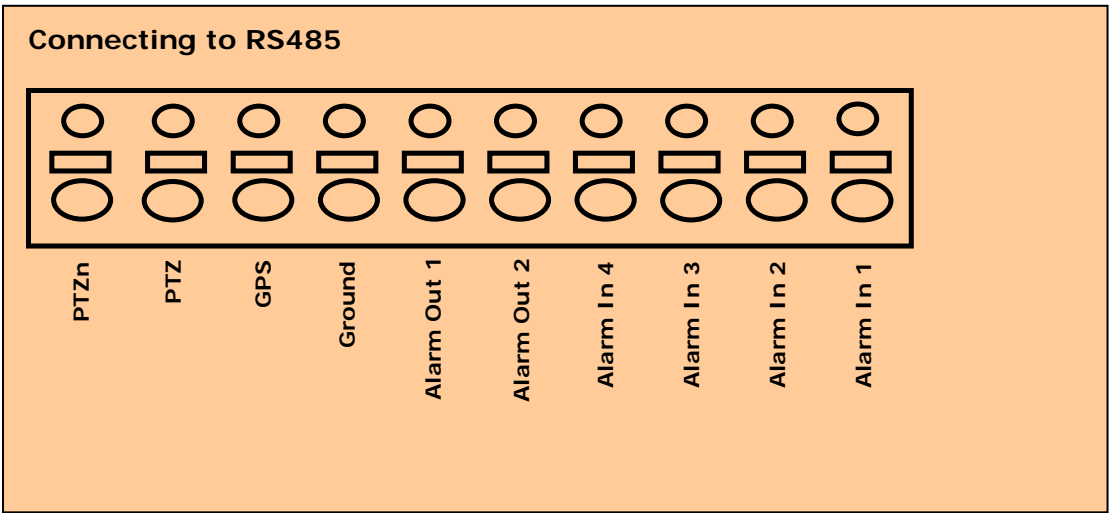
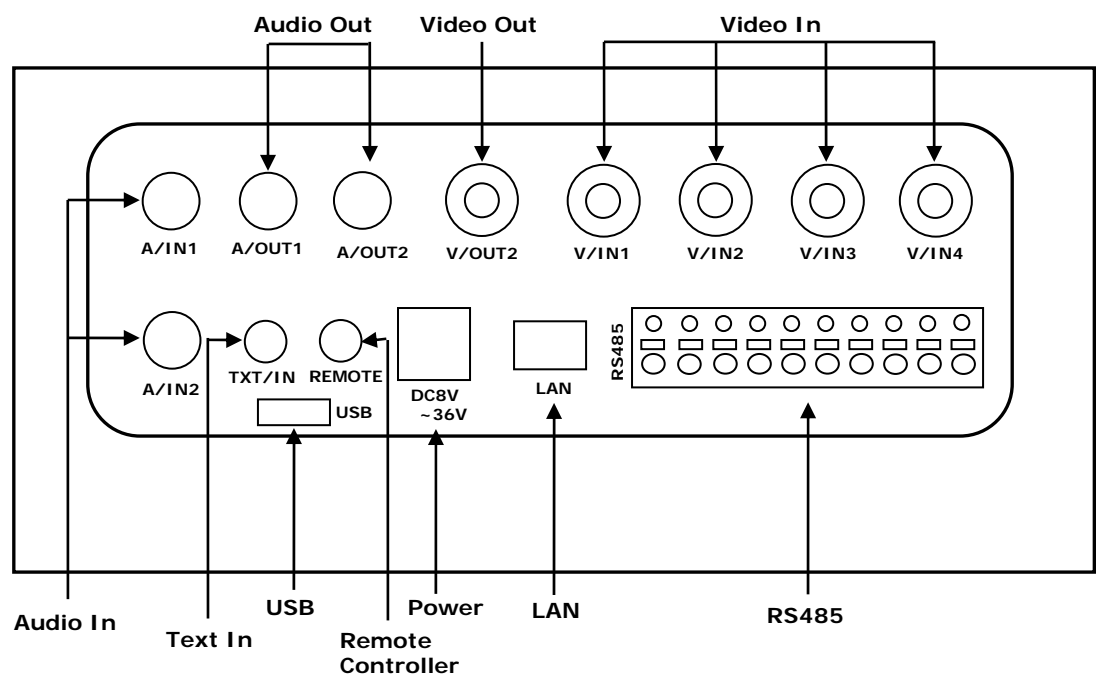
4. Attach the Bracket onto the Tray by using the supplied screws and insert the Tray into the DVR HDD slot.

#### ※ NOTE

1. To separate HDD from DVR, make sure that you disconnect power cable in stop mode. If you disconnect it during recording the HDD sector will be damaged. Rotating the HDD Lock Key during recording will also result in HDD sector damage.
2. "NO HDD" message appears on screen.  
The HDD is not connected correctly. In this case, disconnect power cable first and check whether the HDD has been connected correctly.



Connections



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### Starting The DVR

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After installing the hard disk, connect the power cord to start the DVR.

※ The HDD Lock in the front panel must be in the lock position before turning on the DVR power.

When starting the DVR for the first time, formatting of the hard disk will commence automatically and the DVR will be initialized as follows.

```
S/W[20060227]-18001
MAC:00-16-F3-00-00-00
HDD0:SAMSUNG SP0802N
      [NOT FAT32][74G]
      SMART PASS
HDD1:SEARCH...
```

```
S/W[20060227]-18001
MAC:00-16-F3-00-00-00
HDD0:SAMSUNG SP0802N
      [NOT FAT32][74G]
      SMART PASS
HDD1:SEARCH...NOT FOUND
PARTITION HDD0 100%
VFORMAT HDD0 100%
```

The DVR will perform “**S.M.A.R.T.**” check of the installed hard disk as shown in the above figures.

- The first Line indicates the version of the DVR software.
- The second line indicates the MAC address.
- The third line indicates the hard disk information(Model name, whether or not it is formatted(FAT32) or not(NOT FAT32), HDD capacity, and S.M.A.R.T. check result.

If no problem is detected [**S.M.A.R.T. PASS**] will be indicated and if problem is detected [**S.M.A.R.T. FAILURE**] will be indicated and a warning will appear on the monitoring screen every 1 minute for a duration of 5 seconds.

The hard disk capacity indicated may be smaller than the capacity declared by the hard disk producer. This difference may occur due to the difference in measure units and therefore is not a defect.

If the hard disk detected has not been formatted, recording will start after the formatting is completed.

#### ※ S.M.A.R.T. (Self Monitoring, Analysis and Reporting Technology)

S.M.A.R.T. is a reliability prediction technology to anticipate the failure of a hard disk drive with sufficient notice to allow a system or user to back up data prior to a drive's failure.

If the controller detects problems in the disk drive reliability, it will release a warning to the user. In such a case, the use of the disk drive should be stopped immediately and have it examined.

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### Log In & Log Out

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The USER will be required to Log In(Type in the PASSWORD) in order to enter Setup, Search(Playback), PTZ Control, and Log Search.



※ **Default PASSWORD is set at "0000"**

- 1) Using the Remote Controller press the [ENTER] button and use the Number buttons to type in the password. You may use the [Left] button for backspace.
- 2) After typing in the Password, press the [ENTER] button. Re-type the correct Password if the following message appears on the screen.

**WRONG PASS**

- 3) You may now enter the Menu Screen by pressing [ENTER], or press the PTZ, SEARCH, LOG, SETUP buttons to enter each functions.

※ **LOG OUT**

Press [ENTER] to enter the Menu Window and select LOGOUT.



This will prohibit any other users other than the authorized personnel with proper password to enter SETUP, SEARCH, PTZ Control, and LOG.

※ Password can be changed in the SETUP - SYSTEM menu.

## 3. CONFIGURATION

Before starting your DVR for the first time, you should establish the initial settings. This includes categories such as time and date, display language, camera, audio, remote control, record mode, network and password.

Press the [MENU] button on the Remote Controller or the DVR front panel to enter the MAIN MENU and select [SETUP].



The selected category will be indicated in a different color as shown in the above figure.

Use the [Up, Down] buttons to move to the desired category and press the [ENTER] button to enter the selected category.

Press [ESC] button to return to the Monitoring Mode.

### ※ OPERATION

PREV : Select Previous category(Up)

NEXT : Select Next category(Down)

ESC : Return to previous mode

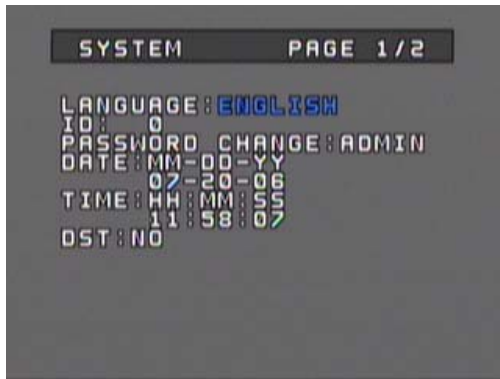
ENTER : Apply the new setting values and move to the next category.

For entering numeric and letter values, the user may use the 10 keys on the remote control.

### ※ Caution

Recording will stop when Date/Time is changed, Formatting occurs and restart recording automatically after initializing the DVR system.

## System Setup

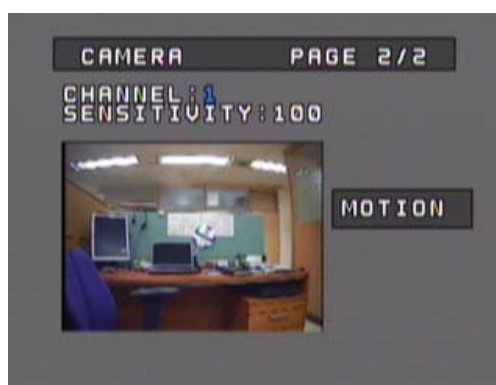


CATEGORY	DEFAULT	ADJUSTMENT
LANGUAGE	ENGLISH	Change the OSD LANGUAGE. [Up, Down][Left, Right]: ENGLISH ⇄ CHINESE ⇄ KOREAN ⇄ JAPANESE [ENTER] : Apply new LANGUAGE.
ID	0	Set the ID(Identification no.) of DVR.(Limit : 0~255) [Left, Down] : Decrease number [Right, Up] : Increase number
PASSWORD CHANGE	0000	Select [ADMIN] and press [ENTER] to change the PASSWORD. [Up, Down, Left, Right] : Change ADMIN ⇄ USER1 ⇄ USER2 [ENTER] : Enter PASSWORD window [Up, Down] : Select letter, number, symbol [ENTER] : Apply new PASSWORD
DATE/TIME	Current Date/Time	Select DATE indication method.(YY-MM-DD, MM-DD-YY, DD-MM-YY.) [Up, Down][Left, Right] : Move between YY-MM-DD, MM-DD-YY, DD-MM-YY [ENTER] : Apply and move to DATE Change DATE/TIME [Left, Right] : Move between Year/Month/Day or Hour/Min./Sec. [Up, Down] : Increase/Decrease the DATE/TIME. [ENTER] : Apply and move to DST ※ System check will be performed when TIME is changed.
DST	NO	Set the DAYLIGHT SAVING TIME. [Up, Down], [Left, Right] : Use⇄Not Use
SETUP IM/EXPORT		Copy the SETUP values from the "/DVRSYS/" folder of the DVR to a USB memory stick or from a USB memory stick to the DVR. [Up, Down][Left, Right] : IMPORT⇄EXPORT. [ENTER] : Perform IMPORT/EXPORT
SYSTEM UPGRADE		Upgrade the Firmware of the System. Copy the Firmware file "/DVRSYS/FW/FDVR0402.BIN" to a USB memory stick and connect the USB memory stick to the DVR.. The DVR will reboot in order to apply the UPGRADE. [ENTER] : Perform UPGRADE.
HDD STATUS		Indicate the HDD's total capacity, current memory status, and S.M.A.R.T. information.
COLOR SYSTEM		Select NTSC or PAL system. [ENTER] : Toggle to change between NTSC⇄PAL.

## Configuration

CATEGORY	DEFAULT	ADJUSTMENT
S/W		The date of the DVR Firmware Version will be indicated.
FACTORY RESET		All setting values will return to its' initial FACTORY DEFAULT values. [Up, Down][Left, Right]: Toggle between YES⇌NO [ENTER] : Apply/Not Apply the initial DEFAULT Values. ✳ Password input will be required.

## Camera Setup



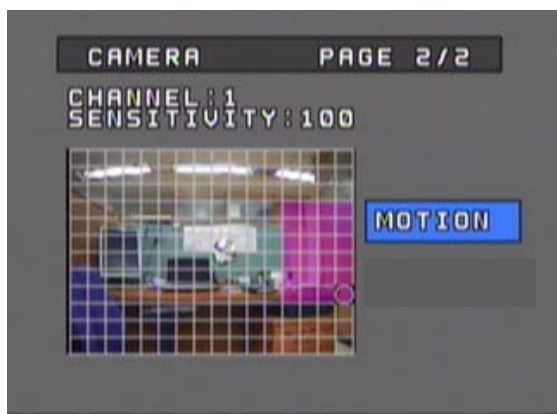
CATEGORY	DEFAULT	ADJUSTMENT
COVERT		Set whether to hide the selected channel or channels from the live monitoring screen while continuing to record the channels. [ENTER] : Toggle to Apply/Not Apply.
CHANNEL	1	Select the channel that is to be configured. [Up, Down][Left, Right] : Change channels [CH] and Numeral keys can also be used to change the channel.
NAME	CH1	Assign an Identification NAME for the cameras. Input Range : Max. 8 characters(Combination of Number/Letter/ Symbol) [Left, Right] : Move to previous or next space. [Up, Down] : Select letter, number, symbol. Numeral/Letter/Symbol keys can also be used to input the Name.
HUE	5	Set HUE level(Limit : 0~255) [Left, Down] : Decrease level [Right, Up] : Increase level Number keys can also be used to change the Hue level.
CONTRAST	5	Set CONTRAST level(Limit : 0~255) [Left, Down] : Decrease level [Right, Up] : Increase level Number keys can also be used to change the Contrast level.
BRIGHTNESS	5	Set BRIGHTNESS level(Limit : 0~255) [Left, Down] : Decrease level [Right, Up] : Increase level Number keys can also be used to change the Brightness level.
PTZ ID		Set the PTZ ID.(Limit : 0~255) [Left, Down] : Decrease number [Right, Up] : Increase number Number keys can also be used to change the PTZ ID.

## Configuration

CATEGORY	DEFAULT	ADJUSTMENT
PTZ DRIVER	NONE	<p>Select the PTZ Driver.</p> <p>[Up, Down, Right, Left] : Select the PTZ Driver</p> <p>&lt; Compatible PTZ DRIVER List &gt;</p> <p>Pelco_D, Pelco_P, Panasonic, PT_A100L, DOME1, DOME2, HSDN_251N, WPT_101, SJ_2819, SK_2162D, DSC_230, GROOM_D106, CAZ1723, VC_C4, SCC_C4201, CRR1600T, SRX_100B, VVK_3000, ORX_1000, NK97CH, PIH717, PIH718, Vicon, Hangang, Gateway, E_DSO, Ateye, GRX_1000A, AD, JO308ACU, Sensormatic, Smartscan, Sungjin</p>
PTZ Setting		<p>Set up Baud Rate, Data Bit, Parity, Stop Bit values.</p> <p>[ENTER] : Enter the PTZ Configuration Menu.</p> <p>Press [ENTER] to TEST.</p> <p>[Left, Down] : Decrease Rate/Bit/Parity</p> <p>[Right, Up] : Increase Rate/Bit/Parity</p> <p>PARITY : NON, ODD, EVEN.</p>
SENSITIVITY	80	<p>Set the SENSITIVITY level(Limit : 0(Low)~100(High))</p> <p>[Left, Down] : Decrease level</p> <p>[Right, Up] : Increase level</p> <p>Number keys can also be used to change the Sensitivity level.</p>
MOTION		<p>Select Motion Detection Area.</p> <p>[Up, Down, Right, Left] : Move position</p> <p>[ENTER] : Toggle between Able ⇔ Cancel</p>

## MOTION DETECTION AREA

The area selected for motion detection will be indicated in pink as shown below.





## Recording Setup



CATEGORY	DEFAULT	ADJUSTMENT
RESOLUTION	NTSC 352X240  PAL 352X288	Set the recording resolution level. Even if QUAD recording is selected, only 1 channel will be recorded if the resolution is set at 720x480. Therefore, when 720x480 is set, designate which channel to be recorded. 4 channels can only be recorded if the resolution is set at 352x240. [Left, Right] : Move between resolution and channel(When 720x480 is selected). [Up, Down] : Change resolution(Change channel if resolution is set at 720x480)
AUDIO REC	ALL	Set the AUDIO recording channel [Up, Right][Down, Left] : Move between ALL ⇄ NO ⇄ 1 ⇄ 2 ⇄ ALL.....
TEXT OVERLAY		Select whether to record/display Text Overlay on all channels. [Up, Right][Down, Left] : Move between None ⇄ GPS ⇄ Speed Gun ⇄ POS
WATERMARK USE	NO	Set whether to use the WATERMARK. [Up, Right][Down, Left] : YES⇄NO
WATERMARK KEY	0	Set the WATERMARK KEY value. [Left, Down] : Decrease value [Right, Up] : Increase value Limit : 0~15
WATERMARK STRENGTH	0	Set the WATERMARK STRENGTH. [Left, Down] : Decrease level [Right, Up] : Increase level Limit : 0~4
CHANNEL	1, 2	Recording FPS and Quality can be set only in groups of 2 channels. Group 1 : Channel 1 & 2 Group 2 : Channel 3 & 4 [Left, Down][Right, Up] : Move between two groups.
FPS	NTSC: 15 PAL : 12	Set the FPS(frame per second). NTSC(fps) : 0, 1, 2, 3, 4, 5, 6, 7, 10, 15, 30 PAL(fps) : 0, 1, 2, 3, 4, 5, 6, 8, 12, 25 [Left, Down] : Decrease FPS level [Right, Up] : Increase FPS level
QUALITY	MIDDLE	Set video recording QUALITY LOW ⇄ MIDDLE ⇄ HIGH ⇄ SUPER [Left, Down][Right, Up] : Move between quality levels.
END OF DISK	OVERWRITE	Set whether to OVERWRITE or STOP recording when the installed HDD is full.



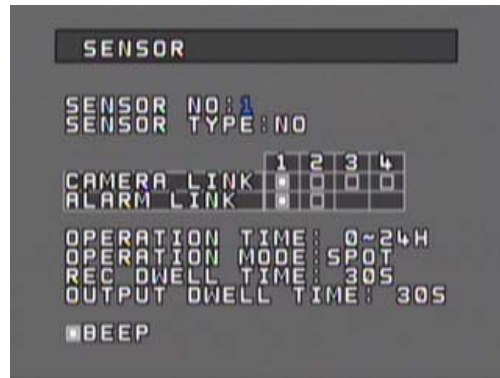
## Record Schedule



The recording time can be set according to Channels, Weekday, and Time.

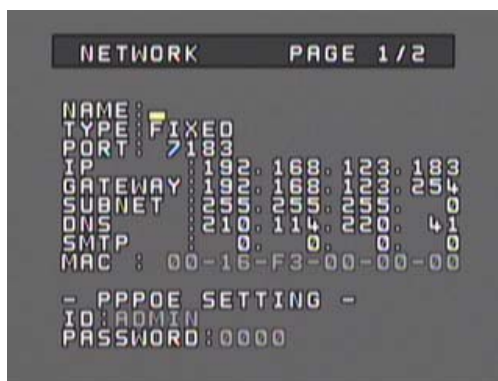
CATEGORY	DEFAULT	ADJUSTMENTS
WEEKDAY	SUN	Select the WEEKDAY Scheduling. [Up, Down] : Change WEEKDAY
SCHEDULE TABLE	C	Set the Recording method. C : Continuous M : Motion D : Dual Mode (Motion + Sensor) S : Sensor X : No recording [NEXT, PREVIOUS] : Move between Weekday and Time Table [Up, Down, Left, Right] : Move to select Channel & Time [ENTER] : C ⇄ M ⇄ D ⇄ S ⇄ X ⇄ C ⇄.... Select ALL and apply the same recording method for the whole day.

## Sensor Setup



CATEGORY	DEFAULT	ADJUSTMENT
SENSOR NO.	1	Set the SENSOR Number. [Left, Down] : Decrease Number [Right, Up] : Increase Number
SENSOR TYPE	NO	Select the SENSOR TYPE [Up, Down, Left, Right] : Select NO or NC
CAMERA LINK		Select the CAMERA that is to be connected to the SENSOR [Left, Down, Right, Up] : Move between channels [ENTER] : Toggle to Enable/Disable
ALARM LINK		Select the ALARM OUTPUT that will be connected to the SENSOR [Left, Down, Right, Up] : Move between channels [ENTER] : Toggle to Enable/Disable
OPERATION TIME	0~24	Set the OPERATION TIME for the selected sensor. (Start Hour ~ End Hour) It will not activate if same time is set. Range : 0~24(Hour) [Left, Right] : Move between Start ⇄ End [Up, Down] : Increase/Decrease hour. Number keys can also be used to change the hour.
OPERATION MODE	SPOT	Set whether to show the camera view in full screen mode when the sensor is triggered. [NORMAL] : Disable, [SPOT] : Apply If a sensor is linked to several channels, the channels will be displayed in multi-screen mode. [Up, Down, Left, Right]: Move between NORMAL⇄SPOT
RECORDING DWELL TIME	30	Set the time duration for which the camera will continue recording when the sensor is triggered. Duration range : 0~600(Second) [Left, Down] : Decrease duration [Right, Up] : Increase duration Number keys can also be used to change the dwell time.
OUTPUT DWELL TIME	30	Set the duration for which the Alarm(Output) will continue after the sensor is triggered. Duration range : 0~600(Second) [Left, Down] : Decrease duration [Right, Up] : Increase duration Number keys can also be used to change the dwell time.
BEEP	ON	Set whether to use the DVR Buzzer when a sensor is triggered. [ENTER] : Toggle Enable/Disable

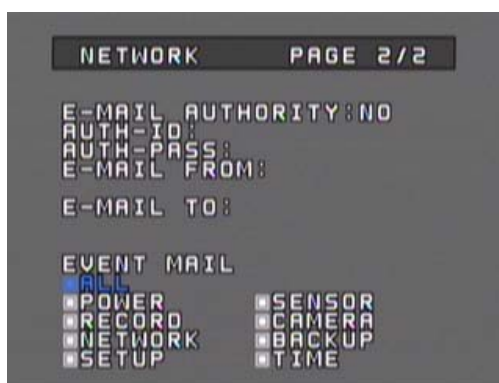
## Network Setup



CATEGORY	DEFAULT	ADJUSTMENT
NAME		Set the DVR NAME. Use the Numeral/Letter/Symbol buttons or the [Up, Down] buttons to input the Name. [Left, Right] : Move to previous, next space [Up, Down] : Select letter, number, symbol
TYPE	FIXED	Select IP Type. [Up, Down][Left, Right]: Select AUTO ⇄ FIXED ⇄r PPPOE
PORT		Set the PORT number that will be connected to the Network. Range : 0~65535 [Left, Down] : Decrease number [Right, UP] : Increase number Number keys can also be used to change the Port number.
IP		Set the IP Address of the DVR. [Left, Right] : Move to next number field [Up, Down] : Increase/Decrease number Number keys can also be used to change the IP number.
GATEWAY		Set the GATEWAY Address of the DVR. [Left, Right] : Move to next number field [Up, Down] : Increase/Decrease number Number keys can also be used to change the Gateway address
SUBNET		Set the SUBNET MASK Number of the DVR. [Left, Right] : Move to next number field [Up, Down] : Increase/Decrease number Number keys can also be used to change the Subnet number.
DNS		Set the DNS Address. [Left, Right] : Move to next number field [Up, Down] : Increase/Decrease number Number keys can also be used to change the DNS address.
SMTP		Set the SMTP Address. [Left, Right] : Move to next number field [Up, Down] : Increase/Decrease number Number keys can also be used to change the STMP address.
MAC		Display the MAC Address of the DVR. MAC Address is pre-set during production and cannot be changed.

## Configuration

CATEGORY	DEFAULT	ADJUSTMENT
PPPOE ID		Set the PPPOE ID for internet connection when using ADSL modems. [Up, Down] : Select letter, number, symbol. [Left, Right] : Move to next space Numeral/Letter/Symbol keys can also be used to change the ID Limit: 16 characters(Combination of numbers and letters).
PPPOE PASSWORD		Set the PPPOE PASSWORD for internet connection when using ADSL modems. [Up, Down] : Select letter, number, symbol. [Left, Right] : Move to next space Numeral/Letter/Symbol keys can also be used to change the Password Limit: 16 characters(Combination of numbers and letters).



CATEGORY	DEFAULT	ADJUSTMENT
E-MAIL AUTHORITY	NO	Set whether E-Mail Login is required for E-MAIL notification when a sensor is triggered [Up, Down][Left, Right] : Select YES or NO
AUTH- ID		Set the E-Mail Login ID [Up, Down] : Select letter, number, symbol. [Left, Right] : Move to next space Numeral/Letter/Symbol keys can also be used to change the ID Limit : 16 characters(Combination of numbers and letters).
AUTH-PASS		Set the E-Mail Login Password. [Up, Down] : Select letter, number, symbol. [Left, Right] : Move to next space Numeral/Letter/Symbol keys can also be used to change the Password. Limit : 16 characters(Combination of numbers and letters).
E-MAIL FROM		Enter the E-MAIL address of the SENDER [Up, Down] : Select letter, number, symbol. [Left, Right] : Move to next space Numeral/Letter/Symbol keys can also be used to input the Address Limit: 50 characters.
E-MAIL TO		Enter the E-MAIL address of the RECEIVER. [Up, Down] : Select letter, number, symbol. [Left, Right] : Move to next space Numeral/Letter/Symbol keys can also be used to input the Address Limit : 50 characters.
EVENT MAIL		Select EVENTS for automatic transmission of e-mail notifications [Up, Down, Left, Right] : Move between the Events. [ENTER] : Toggle to Enable/Disable

## Display Setup



CATEGORY	DEFAULT	ADJUSTMENT
OSD	ALL	<p>OSD(On Screen Display)</p> <p>Designate which information to be shown on the monitoring screen.</p> <p>[Left, Up] : Move to upper information</p> <p>[Right, Down] : Move to lower information</p> <p>[ENTER] : Toggle to Apply/Disable</p>
BORDER COLOR	GRAY2	<p>Set the BORDER COLOR of screen</p> <p>[Left, Up] : Move to upper category.</p> <p>[Right, Down] : Move to lower category.</p> <p>[ENTER] : Toggle to Apply/Disable</p>
SEQUENCE DWELL TIME	5	<p>Set the SEQUENCE DWELL TIME of the monitoring channels</p> <p>Range : 1~60(Second)</p> <p>[Left, Down] : Decrease number</p> <p>[Right, UP] : Increase number</p> <p>Number keys can also be used to change the dwell time</p>
VGA DEINTERLACING	BOB	<p>When viewing video in the progressive(VGA) scan mode the interlaced image is transformed to the progressive image,</p> <p>and if there is moving images, horizontal Lines(Tearing) will appear on the screen. Selecting BOB will make the tearing disappear and if there is no moving images selecting WEAVE will provide a clearer image.</p> <p>[Up, Down, Left, Right] : Select between BOB ⇔ WEAVE</p> <p>[ENTER] : Apply and move to next category.</p>

## Backup & Format



CATEGORY	ADJUSTMENT
BACKUP	<p>Set the START-END TIME of a recorded video for Backup            [Left, Right] : Move between Year/Month/Day/Time            [Up, Down] : Increase/Decrease number            Number keys can also be used to change date &amp; time            Select the backup memory device.            Move to START and press [ENTER].</p>
FORMAT	<p>Format the internal HDD or External Memory            [Left, Right] : Move between the memory drives.            Select the memory to be formatted and activate START            ※ Recording will stop during formatting.</p>

## 4. OPERATION

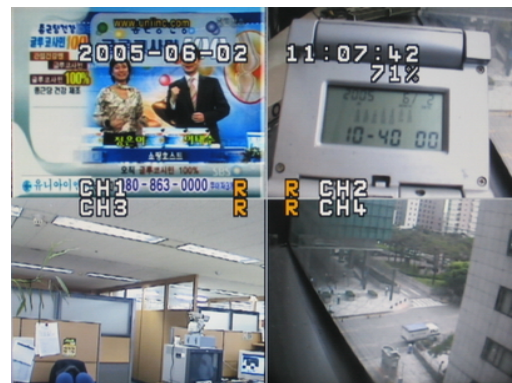
### Monitoring

#### Monitoring Screen

The video signals received by the CMDVR0402 can be viewed on Multi-Screens or the image can be viewed in the Pause and Zoom mode.

Date, Time, Camera Number, Recording Status, HDD Capacity Usage are displayed on the screen.

Information displayed on the screen(OSD) can be changed by pressing the [OSD] button.



#### FREEZE

FREEZE is a function to view still frames during monitoring mode. (Recording will continue).

Press the [FREEZE] button for still frame viewing.

Press the button again to resume monitoring. During Freeze mode, Letter "F" will appear in the center of the screen.



#### ZOOM

ZOOM mode allows 200% magnification of the selected area of the screen.

Press the [ZOOM] button and the magnification area will appear on the center of the screen.

The magnification area can be moved horizontally and vertically by pressing the [Up, Down, Left, Right] buttons. Pressing the [Enter] button each time will magnify/de-magnify the selected area.

Press the [ESC] button to escape from ZOOM mode.





## Operation

### SEQUENCE DISPLAY

Single screen sequence display is possible by pressing the [SEQUENCE] button.  
The Sequence Dwell Time can be set in the [SETUP] – [DISPLAY] menu.



icon will appear on the screen during the sequence display mode.

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## PTZ Control

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This is a mode to control Camera Direction/Focus/Zoom/Preset/Swing/Pattern/Group during the Monitoring Mode.

Press the [PTZ] button from the Monitoring Mode or press [MENU] and select PTZ.



The window showing the PTZ control status will appear on the bottom of the screen

CATEGORY	OPERATION
CHANNEL	Select the channel you wish to control. [CH] : Change channels
PAN / TILT	[Left, Up] : Move camera up and down. [Right, Down] : Move camera left and right.
ZOOM	Use ZOOM buttons to zoom in/out.
FOCUS	Use the FOCUS buttons to focus in/out.
APERTURE	Use the IRIS buttons to adjust the aperture.

For Preset/Swing/Pattern/Group/Setting press [ENTER] after selecting the channel

Enter the Setting mode of the PTZ to set the Preset/Swing/Pattern/Group movement of the PTZ Camera.

※ Please refer to the Operation Manual of the PTZ camera to setup the PRESET, SWING, PATTERN, GROUP configurations.



## SEARCH (Playback)

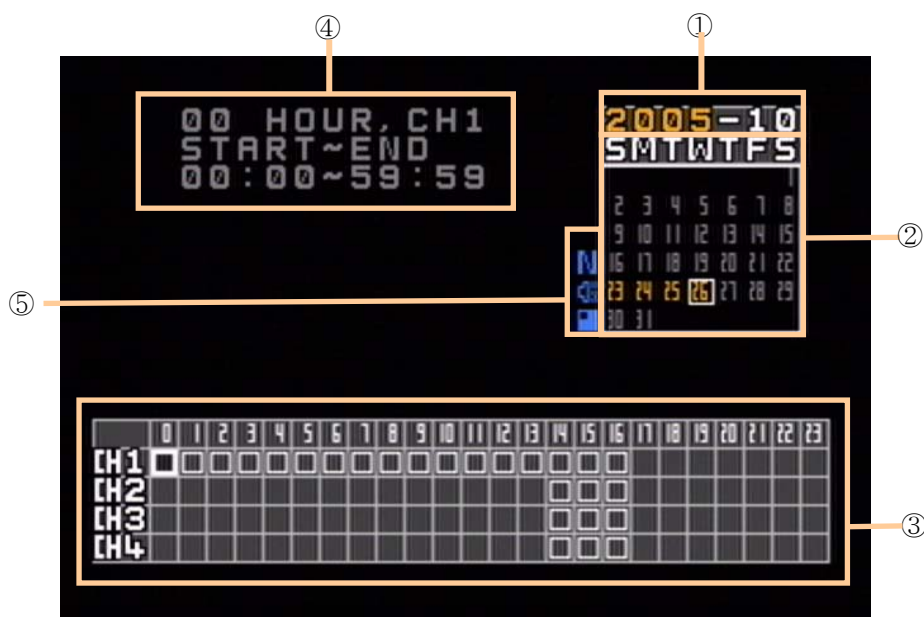
You may search the recorded contents of the DVR by using the Time Search Mode.

Enter the [SEARCH] menu and the following screen will appear.

Select either "DVR" or "USB" (Highlighted with yellow stripe when selected) with the [Up, Down] buttons and press [ENTER].

### DVR Search : TIME & DATE SEARCH

The following Time & Date Search Mode will appear on the screen.



① YEAR - MONTH

② DAY

③ Hour/Channel Table

The recording information will be shown on an Hour and Channel(camera) Table for the selected Day.

④ Recording Information

The recording information of the selected Year, Month, Day, Hour will be shown as "Minute: Second ~ Minute: Second".

⑤ Playback Information

1) Audio Channel

The audio channel status will be indicated as follows..

🔊 (AUDIO OFF), 🔊 (AUDIO 1 ON), 🔊 (AUDIO 2 ON)

2) Multi-Screen Display mode

The multi-screen display mode will be indicated as follows.

🖥️ : CH1, 🖥️ : CH2, 🖥️ : CH3, 🖥️ : CH4, 🖥️ : 4 Split-screen mode

## Operation

### SEARCH PROCEDURE

By selecting the [SEARCH] menu, information of the first file recorded on the current day will appear on the screen. And the search procedure will start from the "Day" indication field.

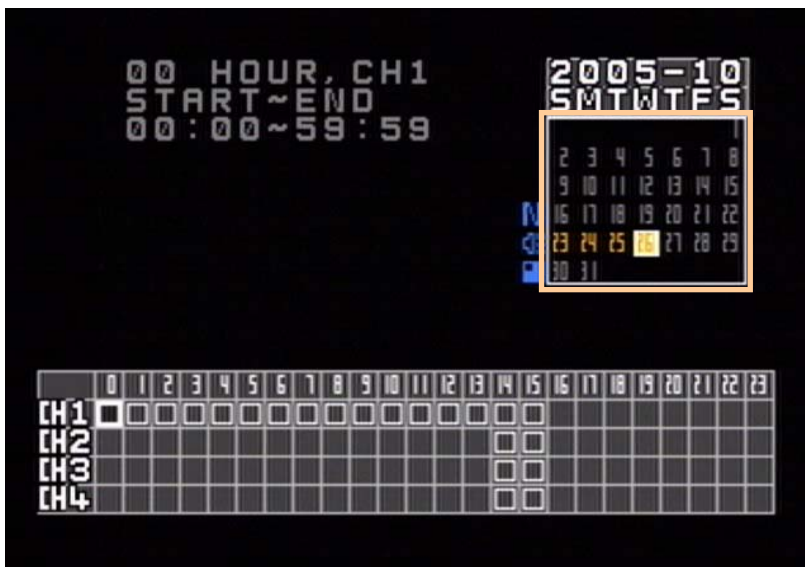
#### 1) Select the Year and Month.



On the calendar, days containing recorded data will be highlighted in yellow.

Button	Function
Left, Right	Move between Year ⇄ Month
Up, Down	Change the Year and Month
ENTER, NEXT	Move to the Day indication field
PREV	PREV : Move to the Hour/Channel indication table

#### 2) Select the Day.



## Operation

Move to the relevant Day and the recording information for the corresponding Day will be indicated on the Hour/Channel indication table.

Button	Function
Up, Down, Left, Right	Move to the desired Day
ENTER	Move to the Hour/Channel indication table
PREV, NEXT	PREV : Move to "Year-Month" indication field NEXT : Move to the Hour/Channel indication table

### 3) Select the relevant Hour/Channel.

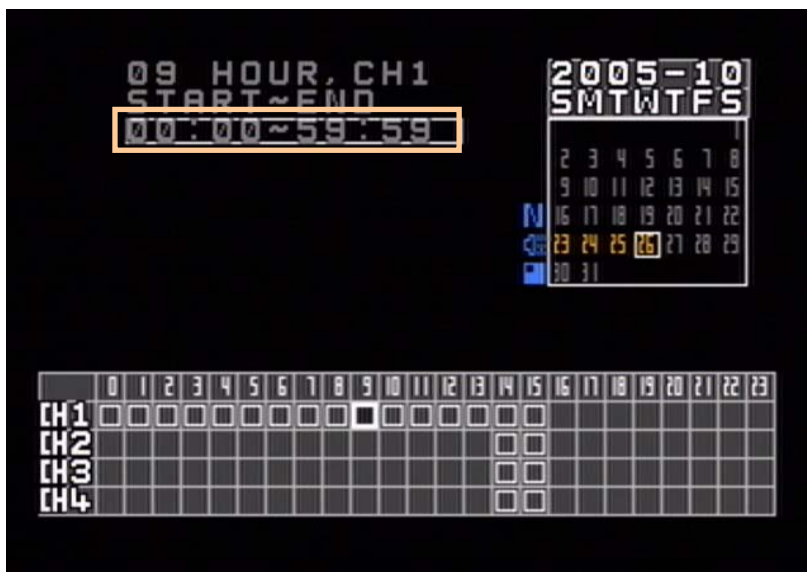


The relevant recording information will appear on the upper left corner of the screen for the selected Hour/Channel.

Button	Function
Left, Right	Move to relevant hour
Up, Down	Move to relevant Channel (CH1 ~ CH4, QUAD Button)
ENTER	Move to Time Range Selection
PREV, NEXT	PREV : Move to Day indication field NEXT : Move to Record information field (If data exist)

## Operation

- 4) Select the relevant Time Range and press [Enter] button to play the recording.



Button	Function
Up, Down	Move from file to file(Time range)
ENTER	Start playback
PREV, NEXT	PREV : Move to Hour/Channel indication table NEXT : Move to "Year-Month" indicator

### FULL SCREEN DISPLAY

The playback screen can be changed to the full screen mode by pressing the [FULL SCR] button.

Playback Information will appear on the lower part of the screen.

Press the [OSD] button to make the Playback Information disappear or appear.

Press the [FULL SCR] button again to return to the Time & Date Search mode.



### < Playback Information >



## Operation

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### USB Search

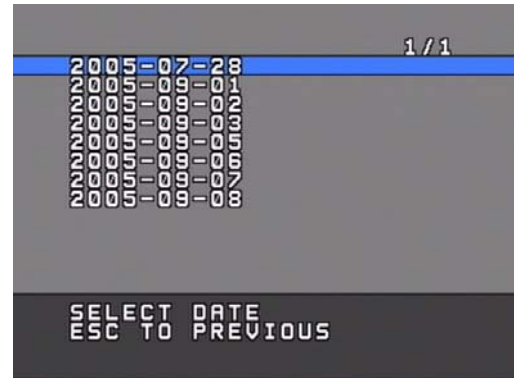
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Data saved on a USB Memory Stick may be played back by following the USB Search procedure. Select the [SEARCH] menu and move to "USB" by using the [Up, Down] buttons. Then press the [ENTER] button to enter the USB Time Search Mode.

#### SEARCH PROCEDURE

The following display will appear on the screen.  
Video data stored in the USB will appear according to the recording dates.

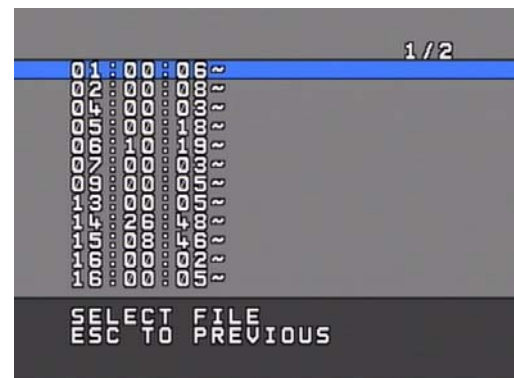
Select the date you wish to search by using the [Up, Down] buttons and press [ENTER].



If data exists for the selected date, the following time display will appear on the screen.

Select the relevant time and press [ENTER] to start playback.

The playback will proceed in the Full Screen Mode.



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### LOG (Event) Search

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All events that occur on the DVR are recorded in the LOG. Select the [LOG] Menu and the following LOG Time Search mode will appear.



## Operation

### ① SORT

Selection of LOG types.

Type	Explanations
POWER	Power On/Off
SENSOR	Sensor Input
RECORD	Record Start/Stop
CAMERA	Camera Input Signal data
NETWORK	Network connections
BACKUP	Start Backup
SETUP	Setup Enter/Exit/Save
CLOCK	Date/Time adjustments

### ② LOG LIST

List of SORT categories of the selected date.

## SEARCH PROCEDURE

### 1) Select the relevant "Year, Month".



On the calendar, days containing LOG records will be highlighted in yellow.

Button	Function
Left, Right	Toggle between Year ⇄ Month
Up, Down	Select the relevant Year and Month
ENTER	Move to the Day indication field
PREV, NEXT	PREV : Move to LOG List(If log records exist for the selected date.) NEXT : Move to Day indication field

## Operation

### 2) Select the desired Day.



Move to the desired Day, then the corresponding log records of the selected Day will appear in the LOG List at the bottom of the screen

Button	Function
Up, Down, Left, Right	Move to relevant Day
ENTER	Move to LOG List
PREV, NEXT	PREV : Move to "Year-Month" indication field NEXT : Move to SORT

### 3) SORT

Select the desired type of log information of the selected Day.



## Operation

Button	Function
Up, Down	Select the SORT category. (Select among ALL, POWER, SENSOR, RECORD, CAMERA, LAN, BACKUP, SETUP, TIME.)
ENTER	Move to LOG List(If log records exist for the selected date.)
PREV, NEXT	PREV : Move to Day indication field NEXT : Move to LOG List(If log records exist for the selected date.)

### 4) Event Playback

Video recordings activated by Alarm Inputs are listed in the LOG List(SENSOR) and the recordings can be played back by selecting "SENSOR ON" from the list and pressing the [ENTER] button. (If recorded data exists)

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## VIDEO CLIP COPY

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Video Clip copies of recorded video datas can be made to a USB Memory Stick by taking following the steps.

### COPY PROCEDURE

1. Enter SEARCH(DVR).
2. Follow the procedure explained in DVR SEARCH to find the relevant video data and activate playback.
3. Find the Starting location of the video clip you wish to make a copy and press the [CAPTURE] button to designate the Starting location. The video will be put on pause and you will be required to select the external memory device on which the copy will be made.
  - ※ The free memory space of the external memory device and the file size of the video clip will be indicated on the screen. The free memory space of the external memory device must be larger than the video clip file size in order to make a copy.
4. Use the Play, Fast Forward/Reverse, Slow Motion, Skip buttons to find the end of the video clip you wish to copy and press the [CAPTURE] button to designate the End location.
5. Copying will proceed and the copy progress rate will be indicated on the screen.

- ※ The [CAPTURE] button can only be used during playback.
- ※ You may return to the monitoring mode during the copying process by pressing the [ESC] button.



## Appendix

### Technical Specification

Category	Specification
Operating System	Embedded Proprietary OS
Compression Algorithm	MPEG4(VIDEO) , ADPCM(SOUND)
Multi-Screen Display	1/4/Sequence
Video Input	4 BNC
Monitor Output	1 Composite
Display Speed	120fps
Recording Resolution	352x240, 720x480(NTSC), 352x288, 720x576(PAL)
Recording Speed(CIF)	Max 120fps(NTSC), Max 100fps(PAL)
Recording Mode	Continuous, Timelapse, Schedule, Event
Audio	2 Line-In / 2 Line-Out
Search Method	Time & Date, Event
Sensor Alarm	4 Alarm Input(NO/NC) / 1 Alarm Output
Network Interface	RJ-45
PTZ Interface	RS-485
Storage	1 Swappable 3.5"HDD(2.5" Option)
Control	Front Panel, Remote Controller
Special Features	Motion Detection, Event Log, Text Overlay of Vehicle/ GPS/Speed-Gun Information
Network Monitoring	Remote Access Software
Verification	Digital Watermark
Vibration Absorption	Internal Shock Proof Cradle
Operating Temperature and Humidity	-4°F ~ 140°F / 20~90%RH
Storage Temperature and Humidity	41°F ~ 104°F / 20~80%RH
Weight	3.5kg
Dimension(W x H x D)	178mm x 82mm x 275mm
Power Supply	DC 8V~36V